

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
HAYSTACK OBSERVATORY
WESTFORD, MASSACHUSETTS 01886

September 11, 2006

Telephone: 978-692-4764
Fax: 781-981-0590

To: Mark 5 Development Group

From: Dan L. Smythe

Subject: 5-meter VSI cable at 2048 Mb/s

I have evaluated the performance of a 5-meter-long VSI cable using a 2048-Mb/s test vector generator (32 bit streams at 64 MHz). The test setup for this evaluation was a VSI4 board connected to a Mark 5B DIM. The Xilinx configuration PROM on the VSI4 board was re-programmed to produce VSI test vectors according to the VSI standard at a clock rate of 64 Mb/s. The Mark 5B was used to make two kinds of recordings at 1024 Mb/s. The first set of recordings was made with a 0xffff bit-stream mask and a decimation of 1 to record 16 of the input bit streams at 1024 Mb/s. The second set used a 0xffffffff bit-stream mask and a decimation of 2 to record all of the input bit streams at 1024 Mb/s. The 'scan_check?' query was used to check all of the recorded scans, and no errors were found. A total of 10 scans were recorded, ranging in length from 16 to 182 seconds.

Since the data on the VSI cable was at 2048 Mb/s, it is reasonable to conclude that the 5-meter VSI cable does not cause any significant errors at the maximum Mark 5 data rate.